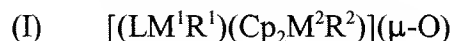


**Listing of the Claims:**

The following is a complete listing of all the claims in the application, with an indication of the status of each:

1. (Original) A binuclear, oxygen-bridged, bimetallic complex of the general formula I:



where:

$M^1$  = Al, Ge, Zr or Ti;

$M^2$  = Zr, Ti, or Hf;

Cp = cyclopentadienyl;

$R^1, R^2$  = H'; C(1-6) alkyl; halogen; aryl;  $SiMe_3$ ; and alkaryl where aryl =  $C_6H_{5-n}X_n$

X = halogen, C(1-6) alkyl, aryl  $NO_2$ ,  $SO_3H$ ,  $NR^3$ , where  $R^3$  = C(1-6) alkyl or H and n = 0 to 5; and

L = a bidentate, doubly heteroatom-coordinated organochemical ligand which together with the metal  $M^1$  forms a 5- or 6-membered ring.

2. (Currently amended) The binuclear, oxygen-bridged, bimetallic complex as claimed in claim 1, in which

$R^1, R^2$  = methyl, ethyl, i-propyl, t-butyl, halogen, phenyl, alkylphenyl, and  $SiMe_3$ , and

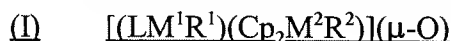
L is a bidentate, doubly nitrogen-coordinated organochemical ligand which, together with the metal  $M^1$ , forms the [[a]] 5- or 6-membered ring.

3. (Currently amended) The binuclear, oxygen-bridged, bimetallic complex as claimed in claim 1, ~~characterized in that it is a heterobimetallic complex,~~ preferably on in which wherein  $M^1$  = Al ~~aluminum~~ and  $M^2$  = Zr ~~zirconium~~, more preferably a complex of the formula  $[(LA1Me)[Cp_2ZrR^2]](-O)$ , where  $R^2$  is Me or Et.

4-5. (Canceled)

6. (Currently amended) A process for preparing a binuclear, oxygen-bridged,

bimetallic complex of the general formula I:



where:

M<sup>1</sup> = Al, Ge, Zr or Ti;

M<sup>2</sup> = Zr, Ti, or Hf;

Cp = cyclopentadienyl;

R<sup>1</sup>, R<sup>2</sup> = H<sup>+</sup>; C(1-6) alkyl; halogen; aryl; SiMe<sub>3</sub>; and alkaryl where aryl = C<sub>6</sub>H<sub>5-n</sub>X<sub>n</sub>

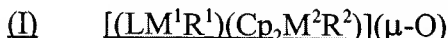
X = halogen, C(1-6) alkyl, aryl NO<sub>2</sub>, SO<sub>3</sub>H, NR<sub>3</sub>, where R<sup>3</sup> = C(1-6) alkyl or H  
and n = 0 to 5; and

L = a bidentate, doubly heteroatom-coordinated organochemical ligand which  
together with the metal M<sup>1</sup> forms a 5- or 6-membered ring,

comprising the step of reacting as claimed in claim 1 characterized in that a  
precursor complex of the formula LM<sup>1</sup>R<sup>1</sup>(OH) is reacted with a metallocene  
precursor complex[[,]] selected from Cp<sub>2</sub>M<sup>2</sup>(R<sup>2</sup>)<sub>2</sub> or Cp<sub>2</sub>M<sup>2</sup>MeR<sup>2</sup> or Cp<sub>2</sub>M<sup>2</sup>HX''  
where X'' is a halogen, where x = halogen, preferably in an inert solvent.

7. (Currently amended) A catalyst preparation for the polymerization of olefins  
 which comprises

at least one complex ~~as claimed in claim 1~~ of the general formula I:



where:

M<sup>1</sup> = Al, Ge, Zr or Ti;

M<sup>2</sup> = Zr, Ti, or Hf;

Cp = cyclopentadienyl;

R<sup>1</sup>, R<sup>2</sup> = H<sup>+</sup>; C(1-6) alkyl; halogen; aryl; SiMe<sub>3</sub>; and alkaryl where aryl = C<sub>6</sub>H<sub>5-n</sub>X<sub>n</sub>

X = halogen, C(1-6) alkyl, aryl NO<sub>2</sub>, SO<sub>3</sub>H, NR<sub>3</sub>, where R<sup>3</sup> = C(1-6) alkyl or H  
and n = 0 to 5; and

L = a bidentate, doubly heteroatom-coordinated organochemical ligand which  
together with the metal M<sup>1</sup> forms a 5- or 6-membered ring, and

at least one cocatalyst.

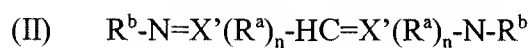
8. (Currently amended) The catalyst preparation as claimed in claim 7,  
~~characterized in that~~ wherein the at least one cocatalyst is an alkyl-aluminoxane;

preferably methalaluminoxane (MAO).

9-11. (Canceled)

12. (New) The binuclear, oxygen-bridged bimetallic complex as claimed in claim 3 wherein  $R^2$  is Me or Cl.

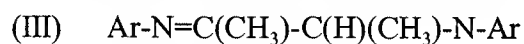
13. (New) The binuclear, oxygen-bridged, bimetallic complex as claimed in claim 1 wherein the ligand L is defined by formula II:



where  $X' = C$  or  $P$ ; and

$R^a, R^b = R^1$ , and  $n = 1$  when  $X = C$ , and  $n = 2$  when  $X = P$ .

14. (New) The binuclear, oxygen-bridged, bimetallic complex as claimed in claim 1 wherein the ligand L is defined by formula III:



where Ar is an aryl.

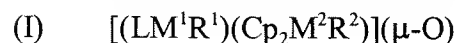
15. (New) The binuclear, oxygen-bridged, bimetallic complex as claimed in claim 14 where in Ar is 2, 6- $iPr_2C_6H_3$  where  $iPr$  is isopropyl.

16. (New) The method of claim 6 wherein said reacting step is performed in an inert solvent.

17. (New) The catalyst preparation of claim 8 wherein said alkyl-aluminoxane is methylaluminoxane.

18. (New) A method of catalytically polymerizing polymers, comprising the steps of:

combining materials to be polymerized with a binuclear, oxygen-bridged, bimetallic complex of the general formula I:



where:

$M^1$  = Al, Ge, Zr or Ti;

$M^2$  = Zr, Ti, or Hf;

Cp = cyclopentadienyl;

$R^1, R^2 = H'$ ; C(1-6) alkyl; halogen; aryl;  $SiMe_3$ ; and alkaryl where aryl =  $C_6H_{5-n}X_n$

X = halogen, C(1-6) alkyl, aryl  $NO_2$ ,  $SO_3H$ ,  $NR^3_2$ , where  $R^3 = C(1-6)$  alkyl or H  
and n = 0 to 5; and

L = a bidentate, doubly heteroatom-coordinated organochemical ligand which  
together with the metal  $M^1$  forms a 5- or 6-membered ring, and

polymerizing the materials using said binuclear, oxygen-bridged,  
bimetallic complex as a catalyst.

19. (New) The method of claim 18 wherein said combining step includes the step  
of adding an alkyl-aluminoxane, trialkyaluminum, or alkylhaloaluminum  
cocatalyst to said materials and said binuclear, oxygen-bridged, bimetallic  
complex.

20. (New) the method of claim 19 wherein said cocatalyst is methylaluminoxane.